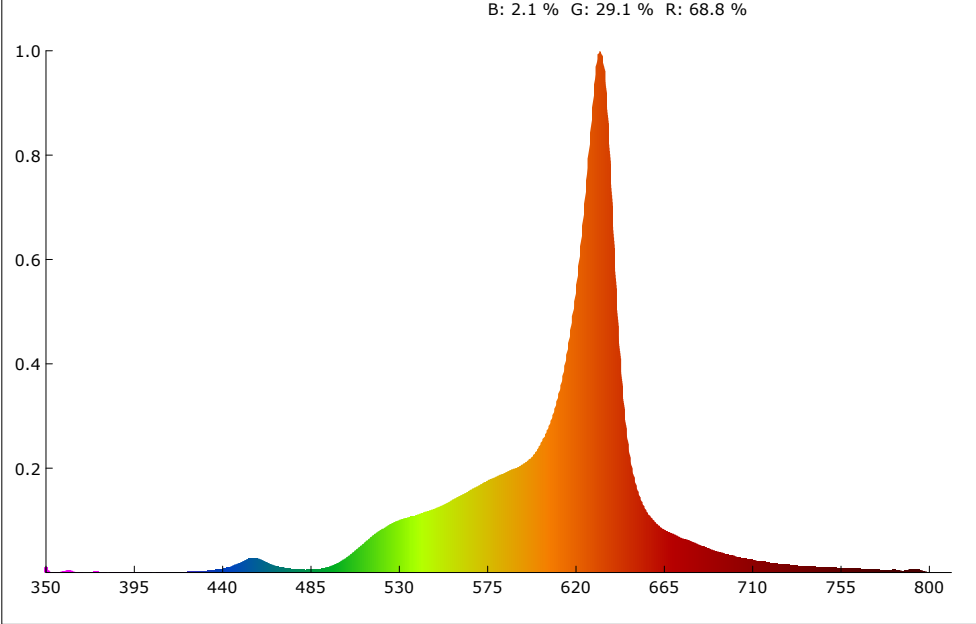
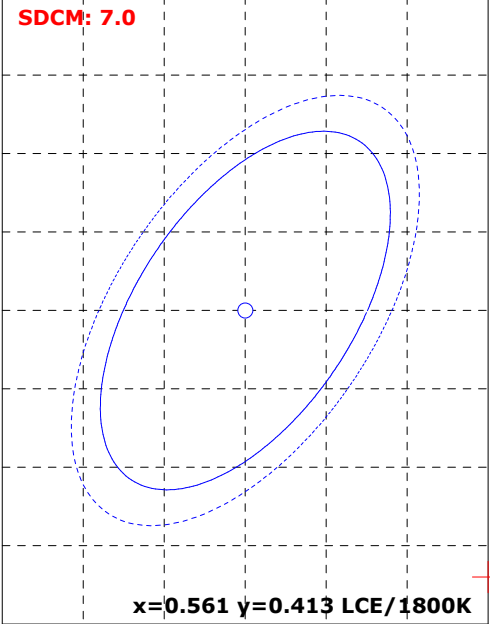


Spectrogram



SDCM



Color Parameter:

x: 0.5653 y: 0.4030 u: 0.3372 v: 0.3606 u': 0.3372 v': 0.5409
R_ratio: 68.8 % G_ratio: 29.1 % B_ratio: 2.1 % RedRatio: 42.4 % GreenRatio: 57.4 % BlueRatio: 0.3 %

Ra: 92.2 AvgR: 90.9
R1: 94.2 R2: 98.2 R3: 88.0 R4: 90.2 R5: 94.3 R6: 88.9 R7: 93.2 R8: 91.0
R9: 77.4 R10: 95.3 R11: 81.0 R12: 91.5 R13: 94.4 R14: 88.4 R15: 97.1

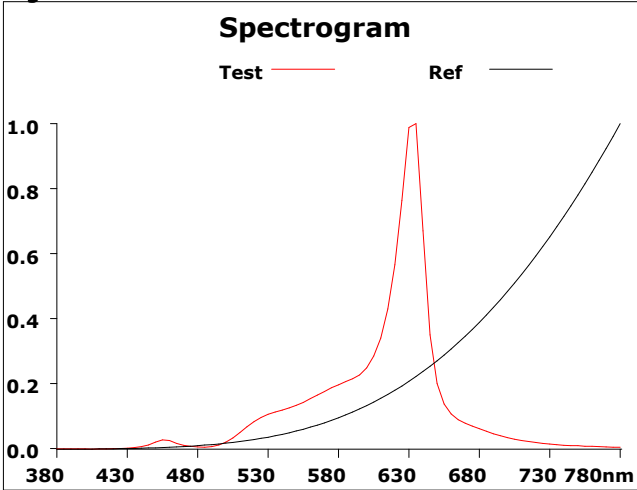
CCT: 1667 K Flux: 6021.179 lm PeakWave: 632.5 nm SDCM: 7.0
S/P: 0.7 CentralWave: 630.3 nm DominantWave: 592.5 nm CentroidWave: 611.2 nm
HalfWidth: 22.1 nm duv: 0.00009 purity: 90.7 % CQS: 48.7
LER(TM-30): 289.8 Ep: 20773.8 mw Rg: 103.9 Rf: 85.0
Red Ep: 13858.0 mw Near red Ep: 528.2 mw Near infrared Ep: 50.4 mw

Electrical parameters:

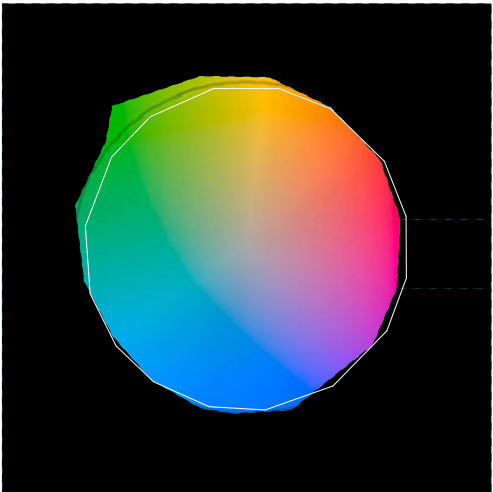
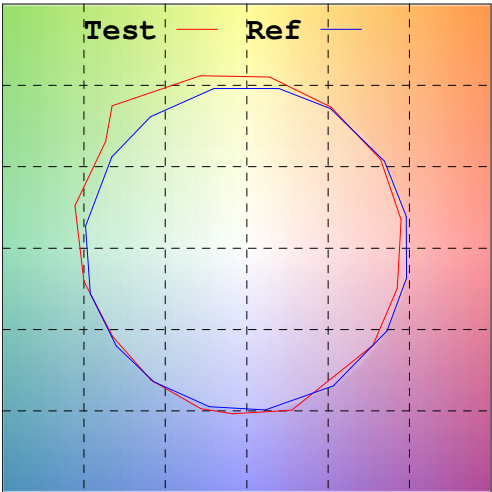
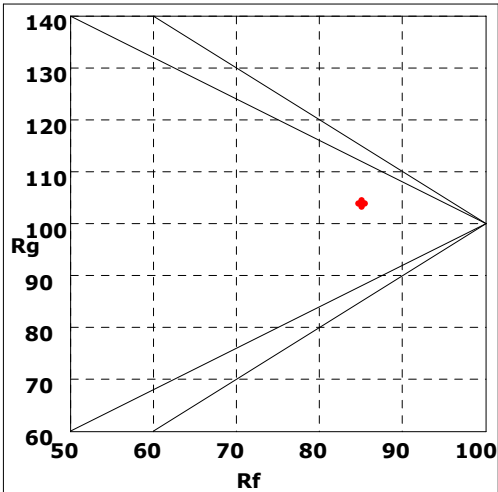
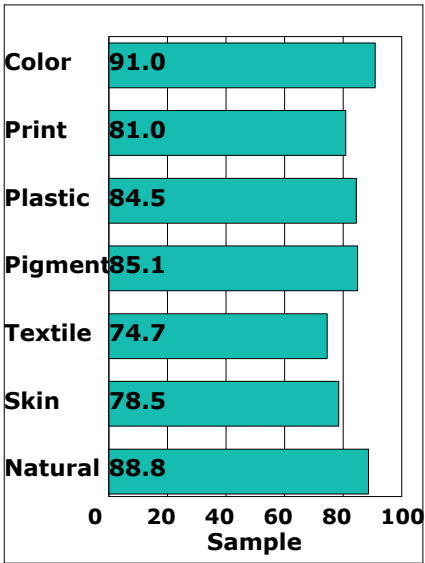
Effic: 41.9 Lm/W Energy: 45.6 Effi: G
U: 219.6 V I: 0.972 A P: 143.800 W Pf: 0.673

Product model: Manufacturer: Guangzhou Hotion Technology Co.,
Product number: Test unit:
Tester: Date of observation: 07/16/14
Remarks:

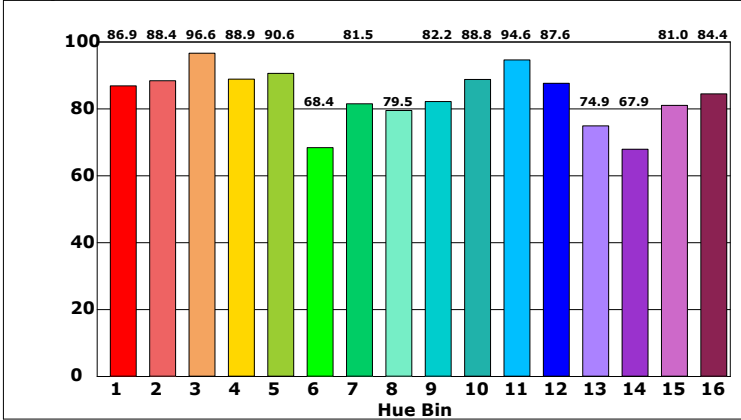
Rf: 85.0 CCT: 1667K u': 0.3372
Rg: 103.9 LER: 289.8 Duv: 0.00009 v': 0.5409



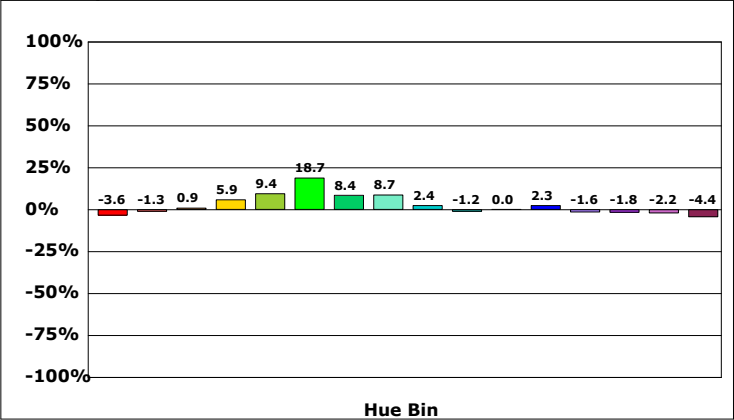
500			
Hue Bin	Rf	Chroma	Hue
1	86.9	-3.6%	-1.5%
2	88.4	-1.3%	2.1%
3	96.6	0.9%	0.2%
4	88.9	5.9%	7.0%
5	90.6	9.4%	6.5%
6	68.4	18.7%	15.9%
7	81.5	8.4%	-5.9%
8	79.5	8.7%	-11.1%
9	82.2	2.4%	-8.4%
10	88.8	-1.2%	-5.9%
11	94.6	0.0%	-1.8%
12	87.6	2.3%	-5.0%
13	74.9	-1.6%	-20.3%
14	67.9	-1.8%	-29.4%
15	81.0	-2.2%	-12.2%
16	84.4	-4.4%	-7.1%



Rf by Bue

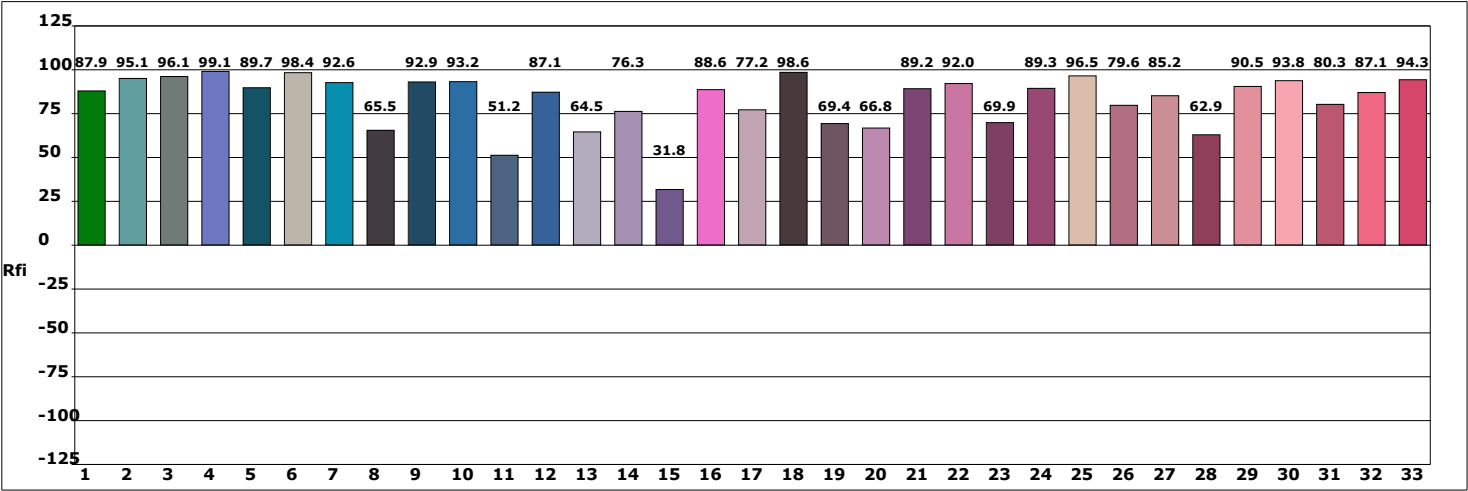
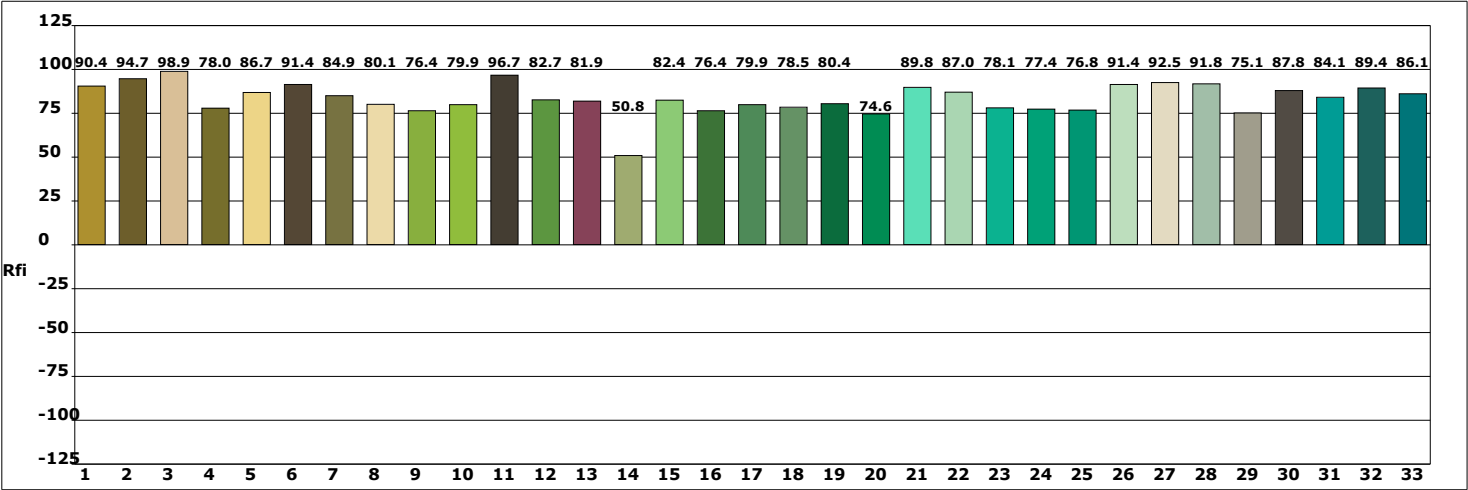
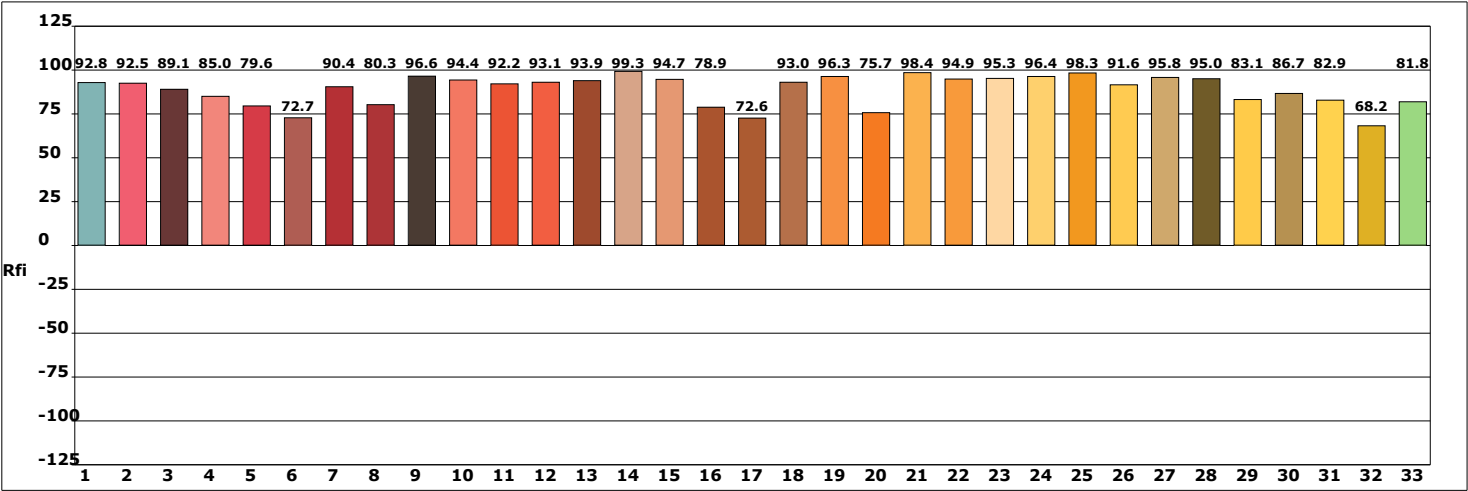


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

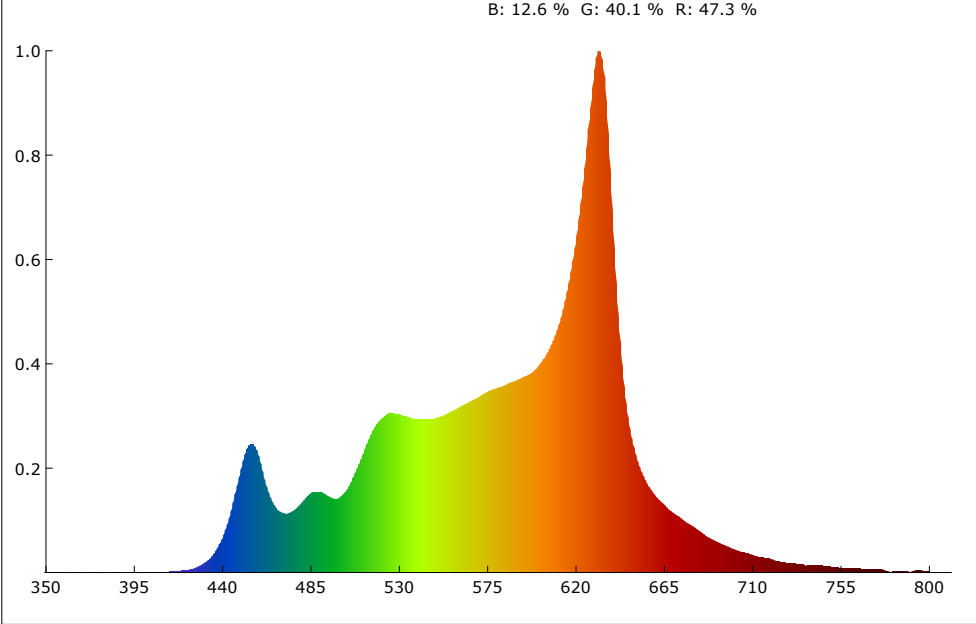
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14



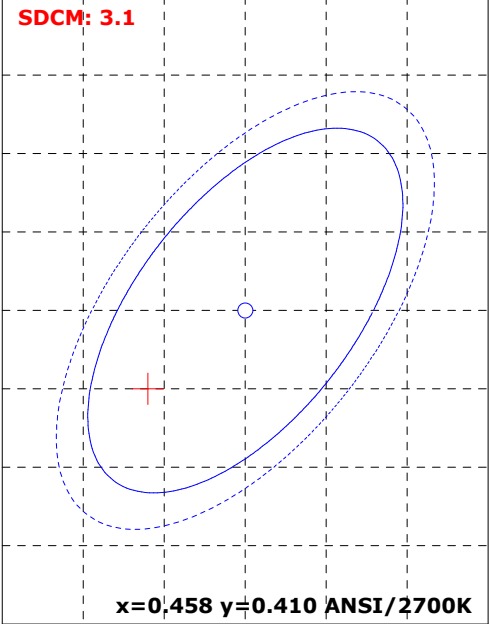
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14

Spectrogram



SDCM



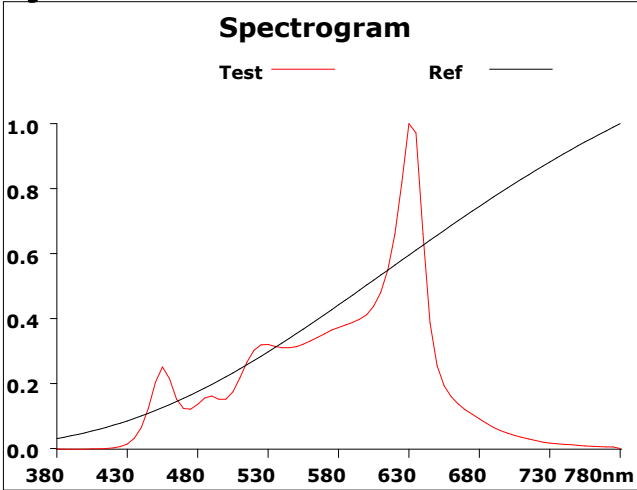
Color Parameter:

x: 0.4518	y: 0.4051	u: 0.2597	v: 0.3493	u': 0.2597	v': 0.5239
R_ratio: 47.3 %	G_ratio: 40.1 %	B_ratio: 12.6 %	RedRatio: 27.1 %	GreenRatio: 71.1 %	BlueRatio: 1.9 %
Ra: 94.5	AvgR: 93.8				
R1: 92.3	R2: 96.7	R3: 95.2	R4: 91.9	R5: 93.4	R6: 91.3
R7: 98.4	R8: 97.1	R9: 96.2	R10: 97.1	R11: 86.8	R12: 87.1
R13: 93.0	R14: 94.9	R15: 95.6			
CCT: 2774 K	Flux: 7766.577 lm	PeakWave: 632.5 nm	SDCM: 3.1		
S/P: 1.4	CentralWave: 627.8 nm	DominantWave: 584.3 nm	CentroidWave: 583.1 nm		
HalfWidth: 27.7 nm	duv: -0.00137	purity: 57.2 %	CQS: 92.6		
LER(TM-30): 320.9	Ep: 24199.0 mw	Rg: 102.1	Rf: 91.9		
Red Ep: 11210.5 mw	Near red Ep: 450.0 mw	Near infrared Ep: 23.0 mw			

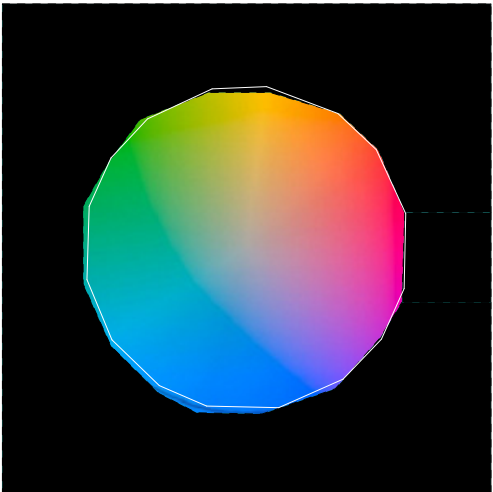
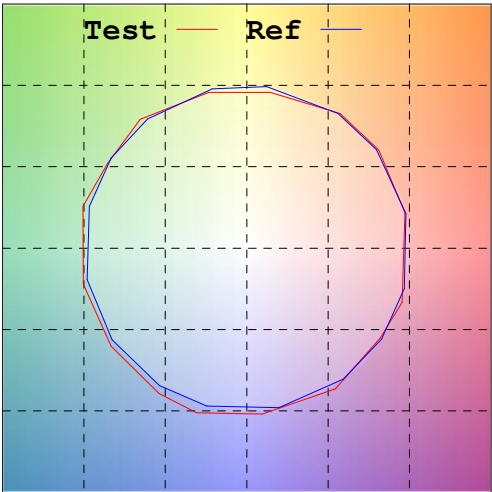
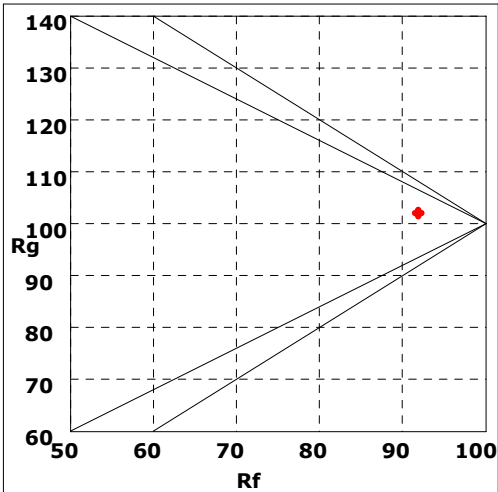
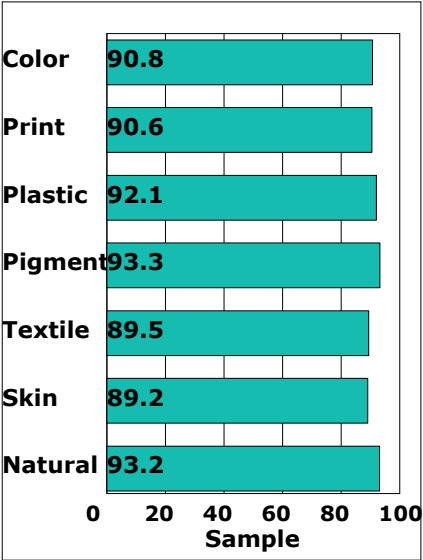
Electrical parameters:

Effic: 45.3 Lm/W	Energy: 49.4	Effi: G	
U: 219.6 V	I: 1.137 A	P: 171.300 W	Pf: 0.685

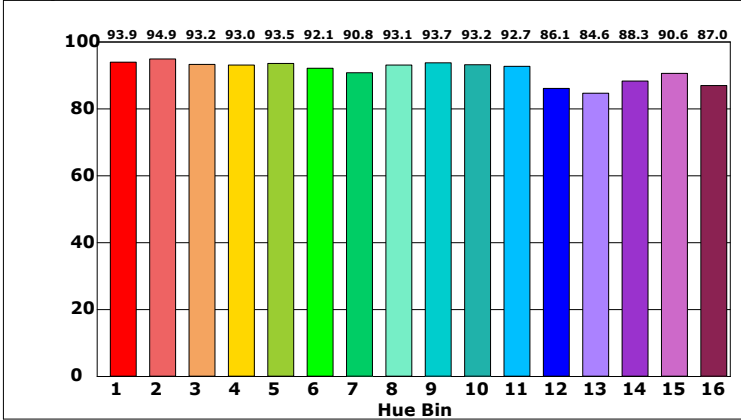
Rf: 91.9 CCT: 2774K u': 0.2597
Rg: 102.1 LER: 320.9 Duv: -0.00137 v': 0.5239



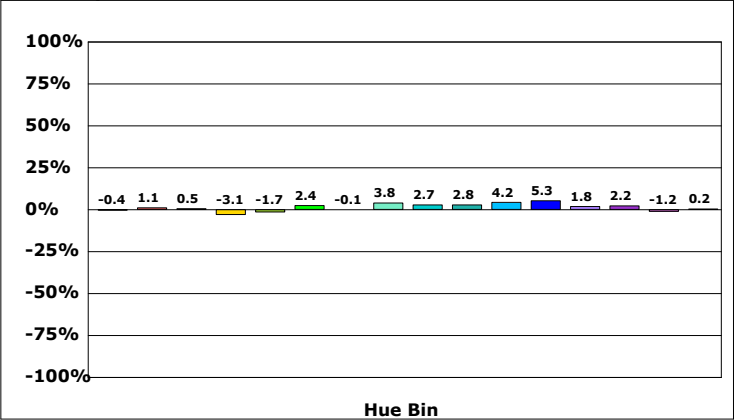
500			
Hue Bin	Rf	Chroma	Hue
1	93.9	-0.4%	0.7%
2	94.9	1.1%	-1.1%
3	93.2	0.5%	-0.9%
4	93.0	-3.1%	-2.7%
5	93.5	-1.7%	2.6%
6	92.1	2.4%	4.0%
7	90.8	-0.1%	3.8%
8	93.1	3.8%	0.8%
9	93.7	2.7%	2.1%
10	93.2	2.8%	2.8%
11	92.7	4.2%	2.6%
12	86.1	5.3%	-5.4%
13	84.6	1.8%	-10.7%
14	88.3	2.2%	-7.3%
15	90.6	-1.2%	0.2%
16	87.0	0.2%	-8.5%



Rf by Bue

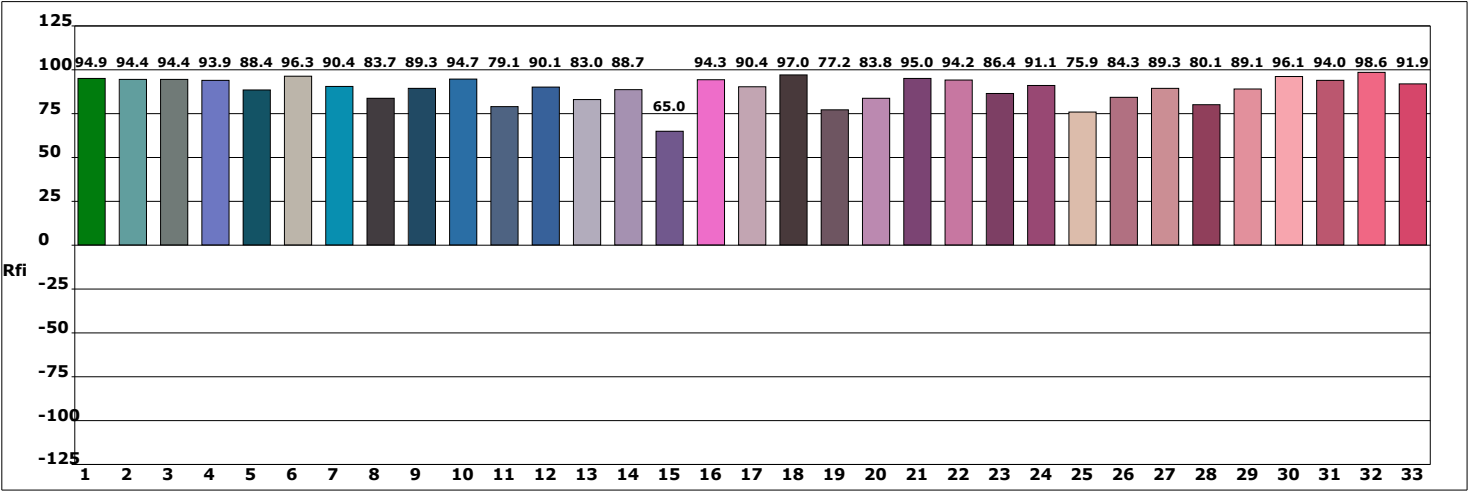
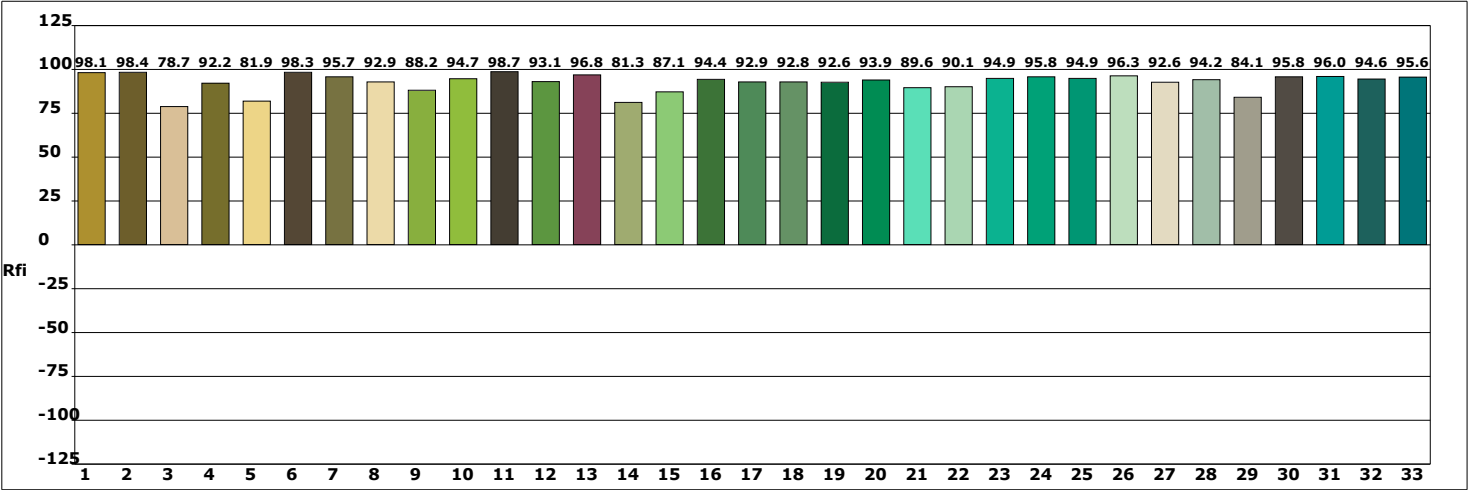
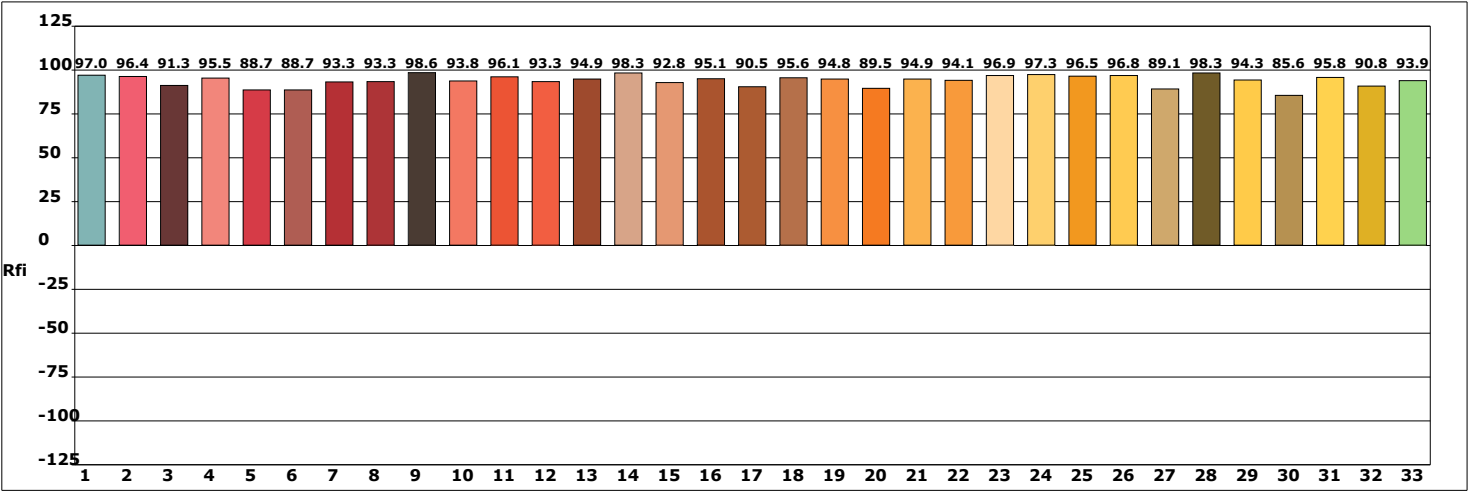


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

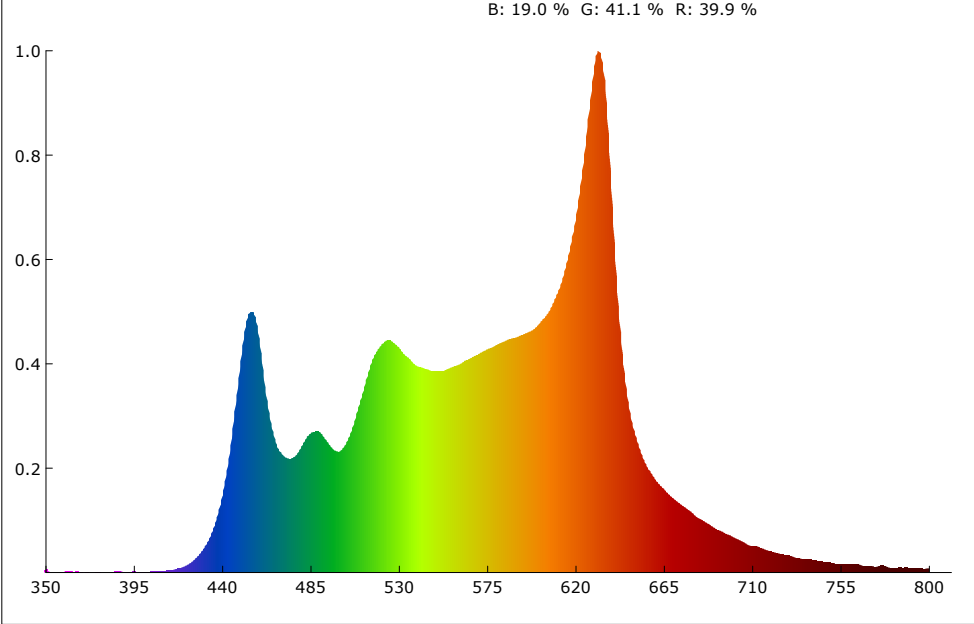
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14



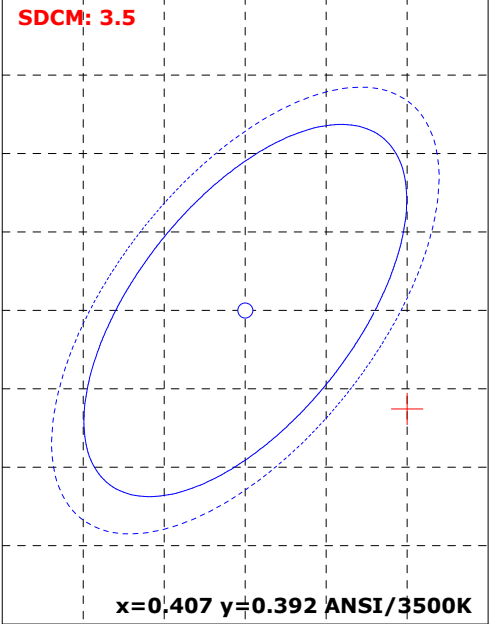
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14

Spectrogram



SDCM



Color Parameter:

x: 0.4050 y: 0.3837 u: 0.2384 v: 0.3388 u': 0.2384 v': 0.5082
R_ratio: 39.9 % G_ratio: 41.1 % B_ratio: 19.0 % RedRatio: 23.2 % GreenRatio: 74.0 % BlueRatio: 2.8 %

Ra: 94.2 AvgR: 92.7
R1: 91.4 R2: 95.6 R3: 97.2 R4: 92.7 R5: 93.0 R6: 91.1 R7: 97.5 R8: 95.3
R9: 91.1 R10: 93.9 R11: 87.9 R12: 82.5 R13: 92.0 R14: 96.5 R15: 93.4

CCT: 3450 K Flux: 8175.932 lm PeakWave: 632.5 nm SDCM: 3.5
S/P: 1.7 CentralWave: 624.8 nm DominantWave: 582.5 nm CentroidWave: 572.1 nm
HalfWidth: 34.6 nm duv: -0.00307 purity: 36.7 % CQS: 93.2
LER(TM-30): 312.0 Ep: 26203.7 mw Rg: 101.7 Rf: 91.3
Red Ep: 10188.9 mw Near red Ep: 613.1 mw Near infrared Ep: 50.1 mw

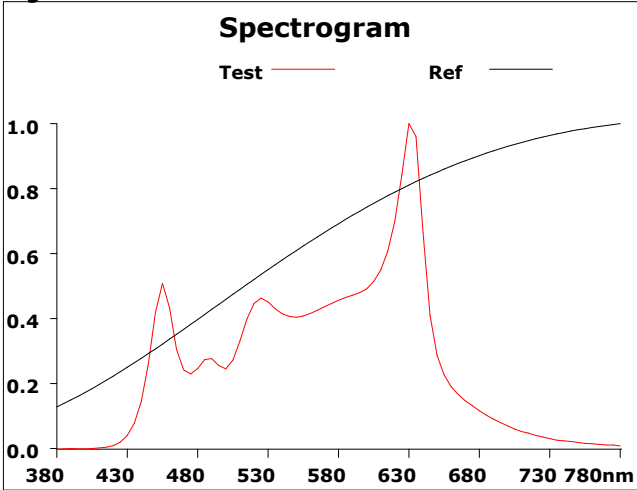
Electrical parameters:

Effic: 44.6 Lm/W Energy: 48.6 Effi: G
U: 219.8 V I: 1.207 A P: 183.300 W Pf: 0.690

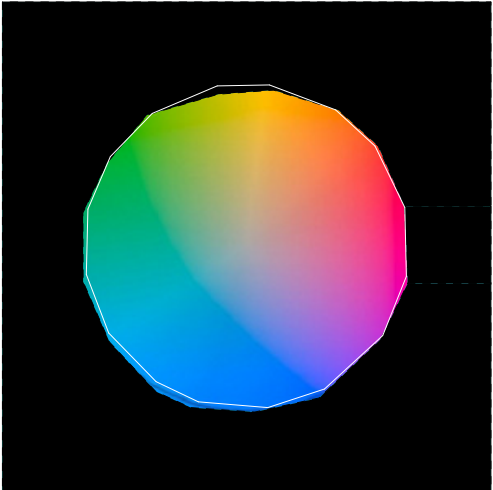
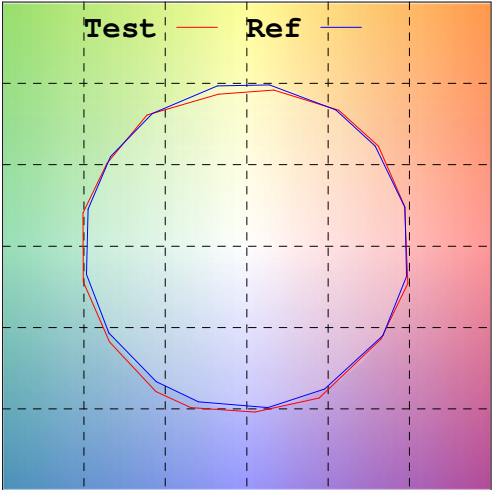
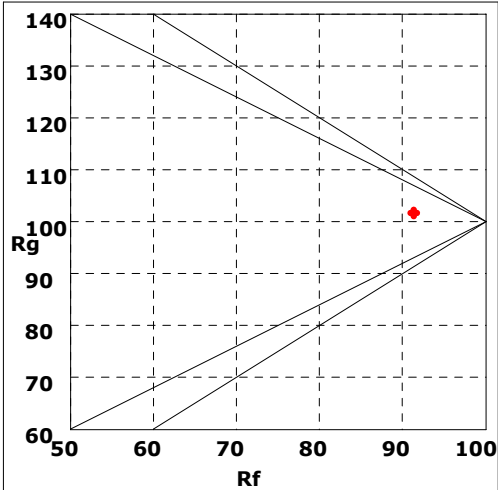
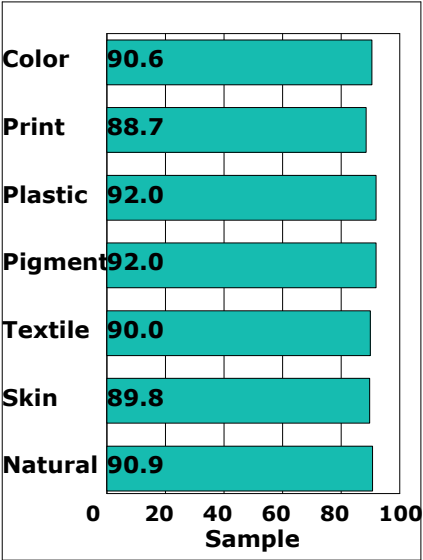
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14

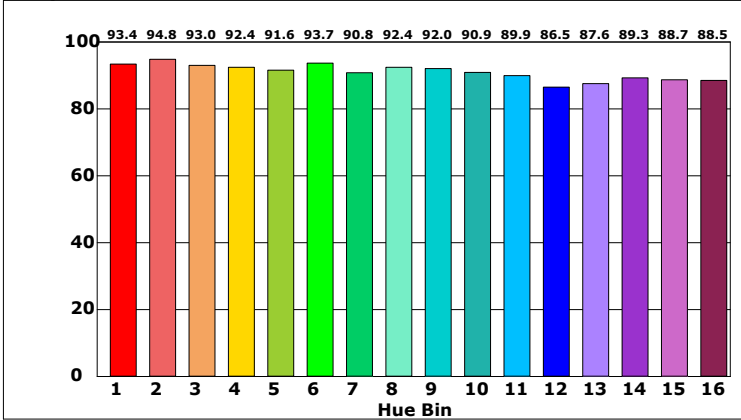
Rf: 91.3 CCT: 3450K u': 0.2384
Rg: 101.7 LER: 312.0 Duv: -0.00307 v': 0.5082



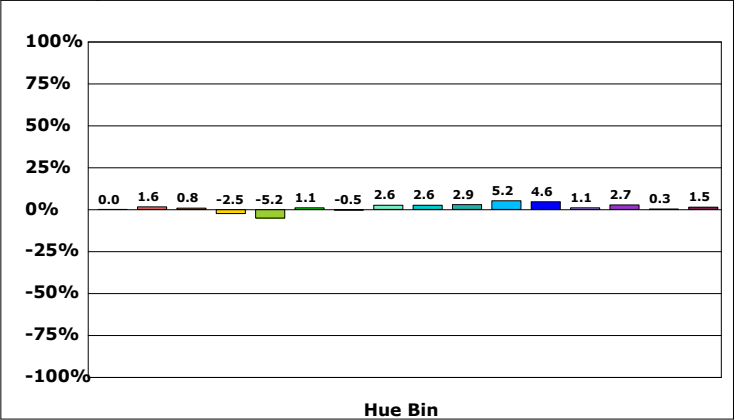
500			
Hue Bin	Rf	Chroma	Hue
1	93.4	0.0%	0.9%
2	94.8	1.6%	-1.2%
3	93.0	0.8%	-1.5%
4	92.4	-2.5%	-3.0%
5	91.6	-5.2%	0.4%
6	93.7	1.1%	3.2%
7	90.8	-0.5%	4.7%
8	92.4	2.6%	3.0%
9	92.0	2.6%	4.0%
10	90.9	2.9%	4.8%
11	89.9	5.2%	3.2%
12	86.5	4.6%	-4.0%
13	87.6	1.1%	-8.4%
14	89.3	2.7%	-5.9%
15	88.7	0.3%	-2.4%
16	88.5	1.5%	-4.0%



Rf by Bue

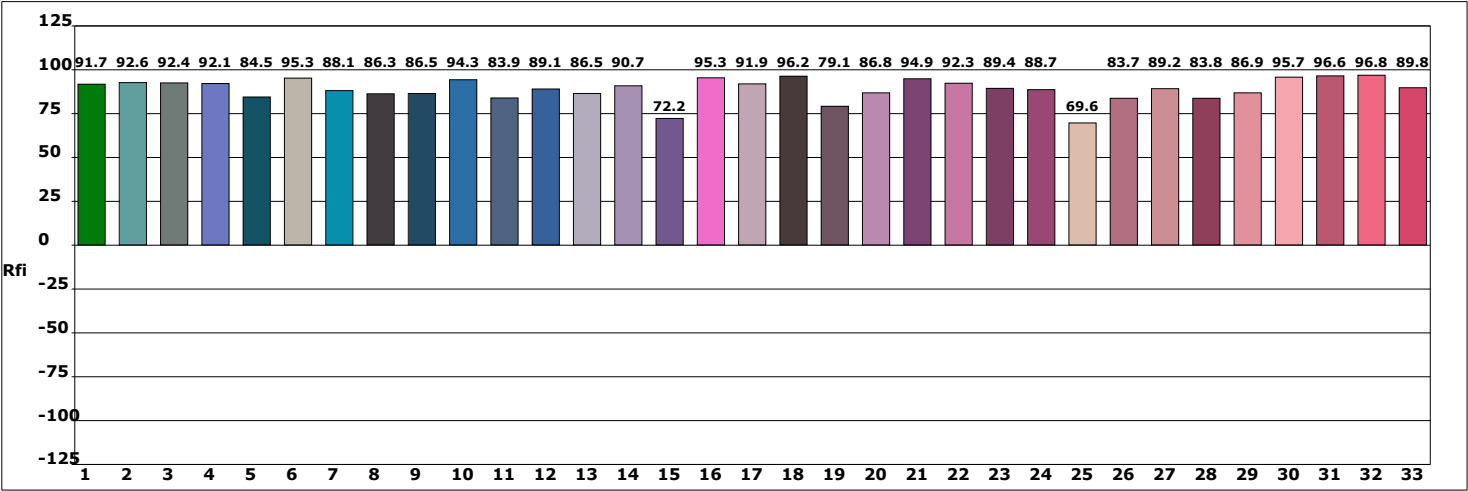
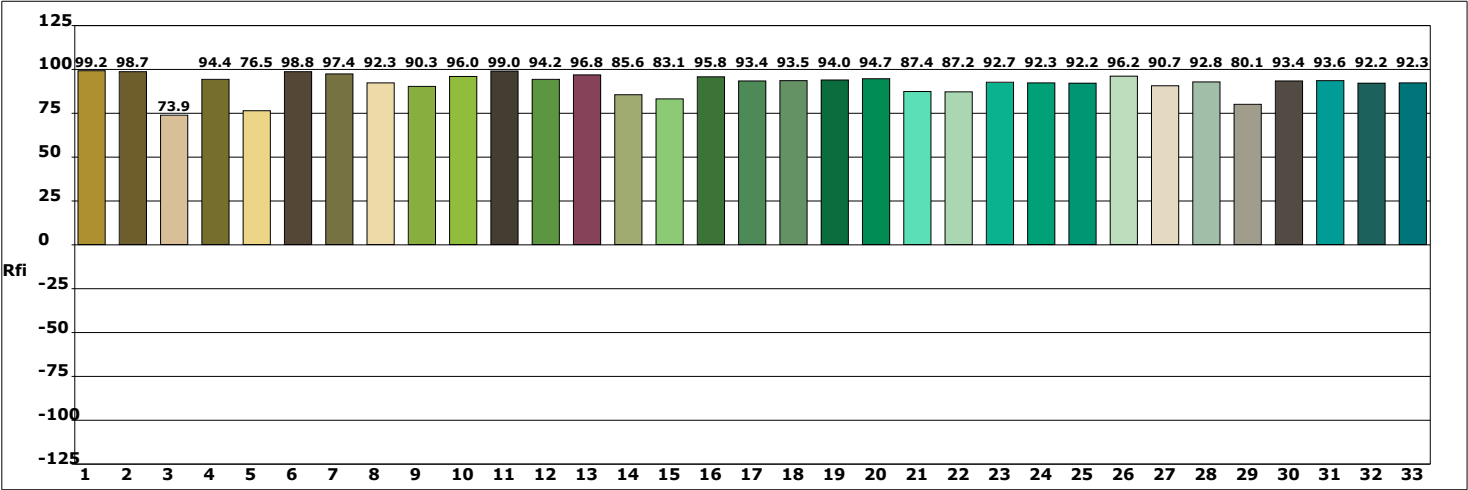
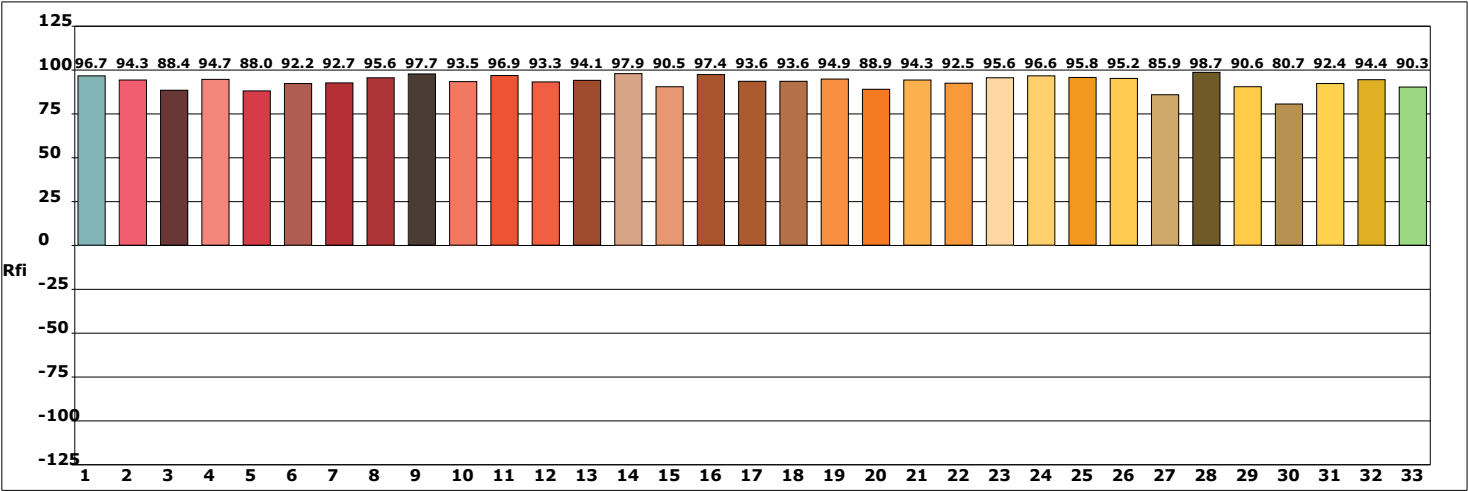


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

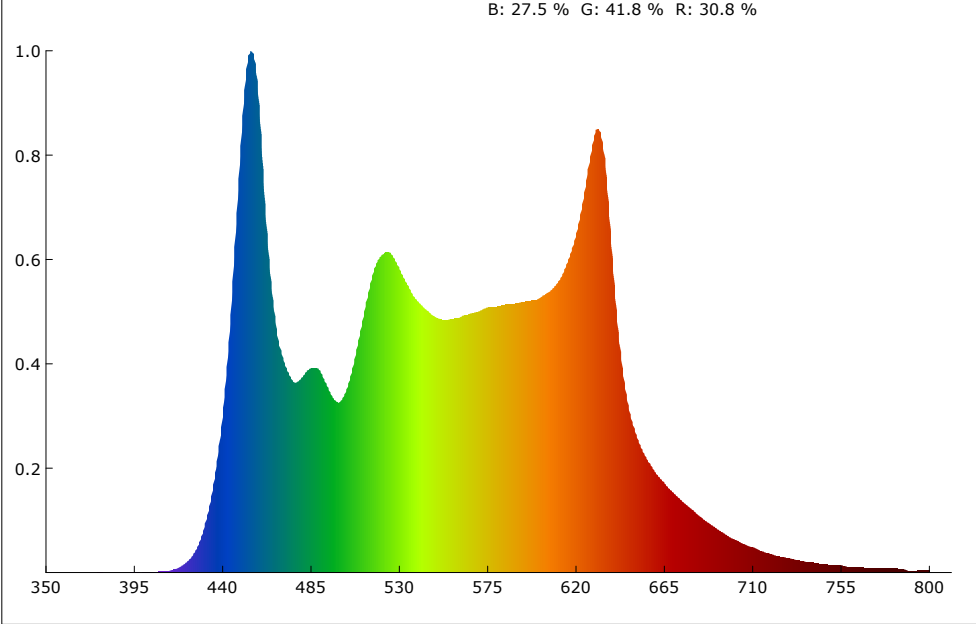
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14



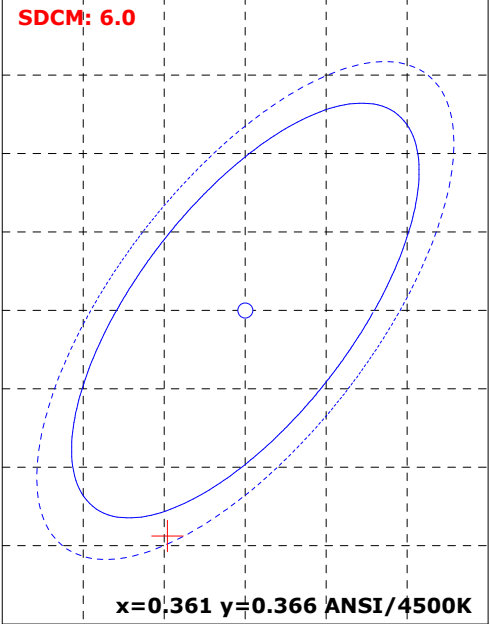
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14

Spectrogram



SDCM



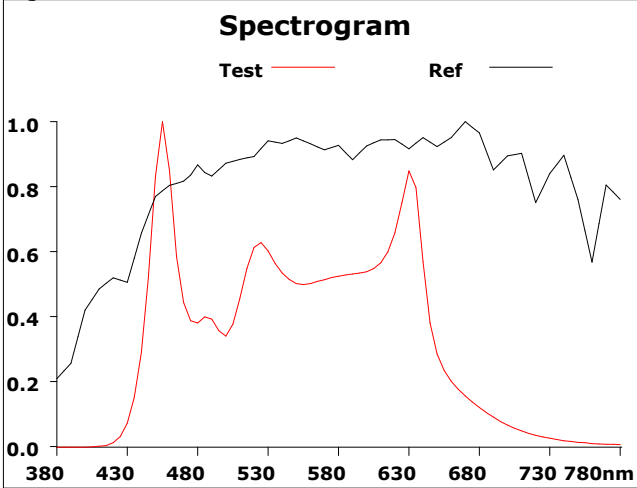
Color Parameter:

x: 0.3502	y: 0.3506	u: 0.2153	v: 0.3233	u': 0.2153	v': 0.4850
R_ratio: 30.8 %	G_ratio: 41.8 %	B_ratio: 27.5 %	RedRatio: 18.7 %	GreenRatio: 77.3 %	BlueRatio: 4.0 %
Ra: 95.9	AvgR: 94.2				
R1: 94.6	R2: 97.6	R3: 96.8	R4: 97.1	R5: 95.7	R6: 93.8
R7: 95.7	R8: 95.9	R9: 95.7	R10: 98.6	R11: 93.8	R12: 70.9
R13: 95.1	R14: 96.7	R15: 94.5			
CCT: 4802 K	Flux: 7731.363 lm	PeakWave: 455.4 nm	SDCM: 6.0		
S/P: 2.1	CentralWave: 455.6 nm	DominantWave: 577.8 nm	CentroidWave: 554.9 nm		
HalfWidth: 21.6 nm	duv: -0.00256	purity: 10.3 %	CQS: 91.2		
LER(TM-30): 304.9	Ep: 25359.6 mw	Rg: 101.5	Rf: 91.1		
Red Ep: 7668.2 mw	Near red Ep: 410.3 mw	Near infrared Ep: 25.9 mw			

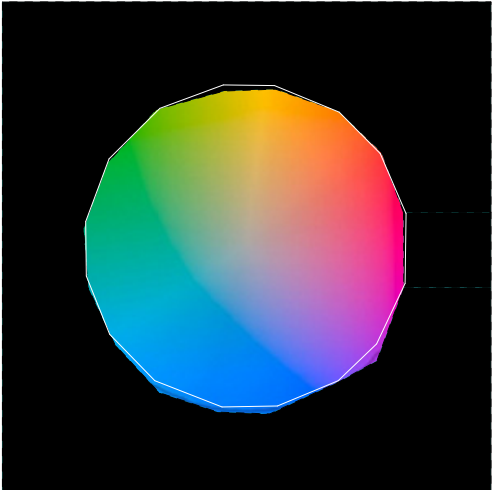
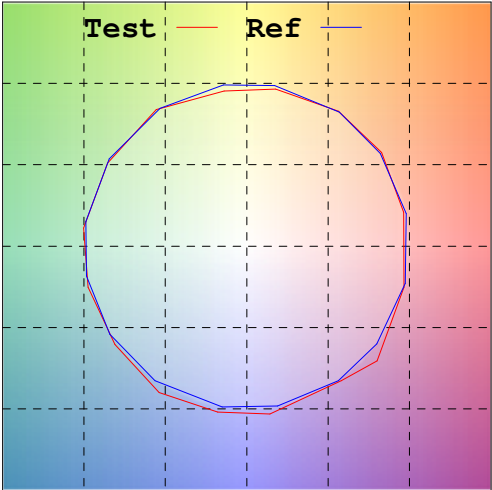
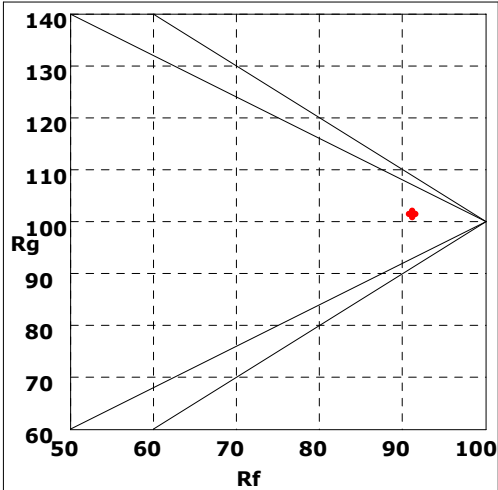
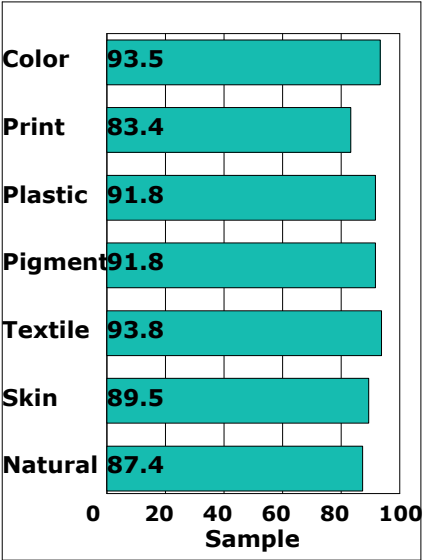
Electrical parameters:

Effic: 43.7 Lm/W	Energy: 47.6	Effi: G	
U: 219.3 V	I: 1.173 A	P: 177.000 W	Pf: 0.687

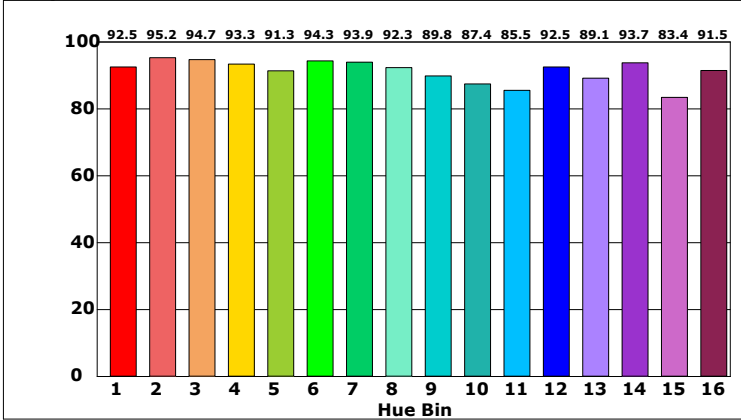
Rf: 91.1 CCT: 4802K u': 0.2153
Rg: 101.5 LER: 304.9 Duv: -0.00256 v': 0.4850



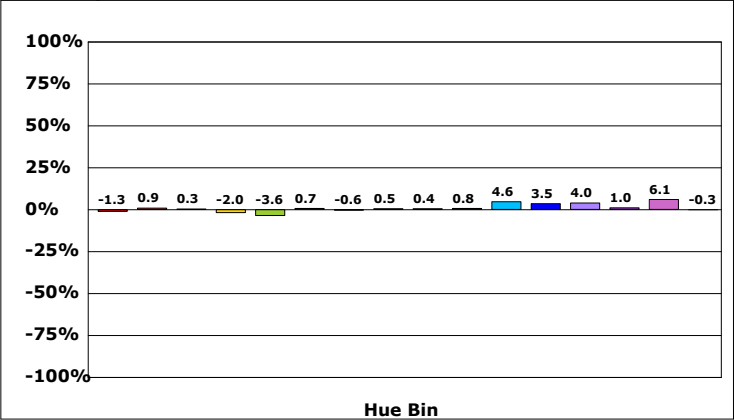
500			
Hue Bin	Rf	Chroma	Hue
1	92.5	-1.3%	1.2%
2	95.2	0.9%	0.1%
3	94.7	0.3%	1.0%
4	93.3	-2.0%	-0.9%
5	91.3	-3.6%	0.4%
6	94.3	0.7%	2.3%
7	93.9	-0.6%	2.7%
8	92.3	0.5%	4.1%
9	89.8	0.4%	6.8%
10	87.4	0.8%	7.1%
11	85.5	4.6%	6.3%
12	92.5	3.5%	-2.1%
13	89.1	4.0%	-5.6%
14	93.7	1.0%	1.4%
15	83.4	6.1%	-8.6%
16	91.5	-0.3%	-2.4%



Rf by Bue

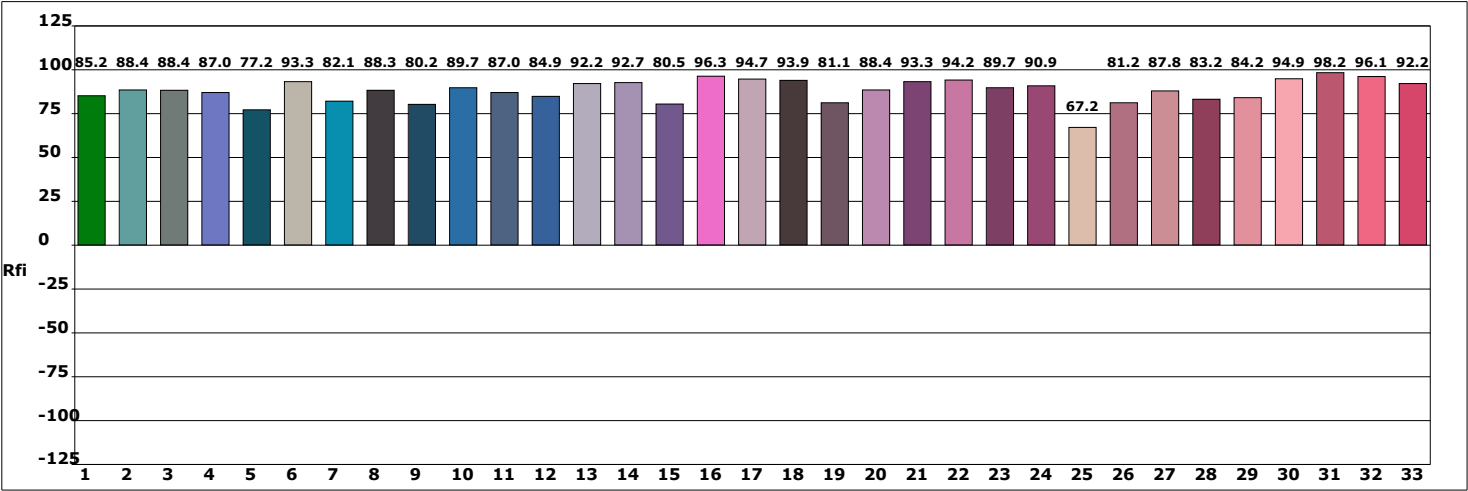
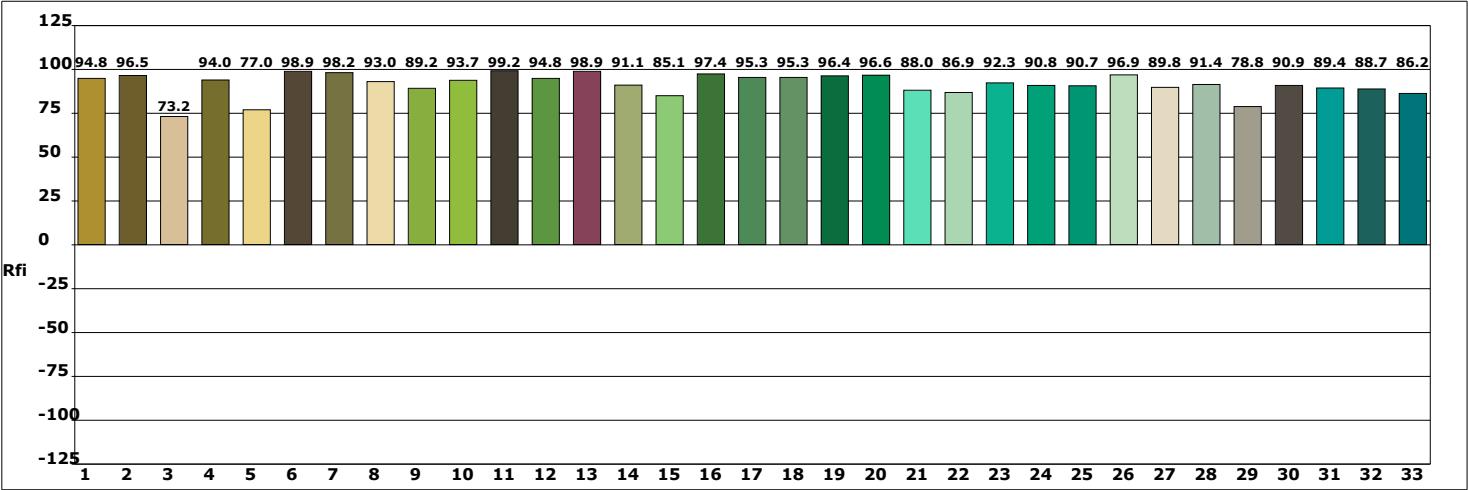
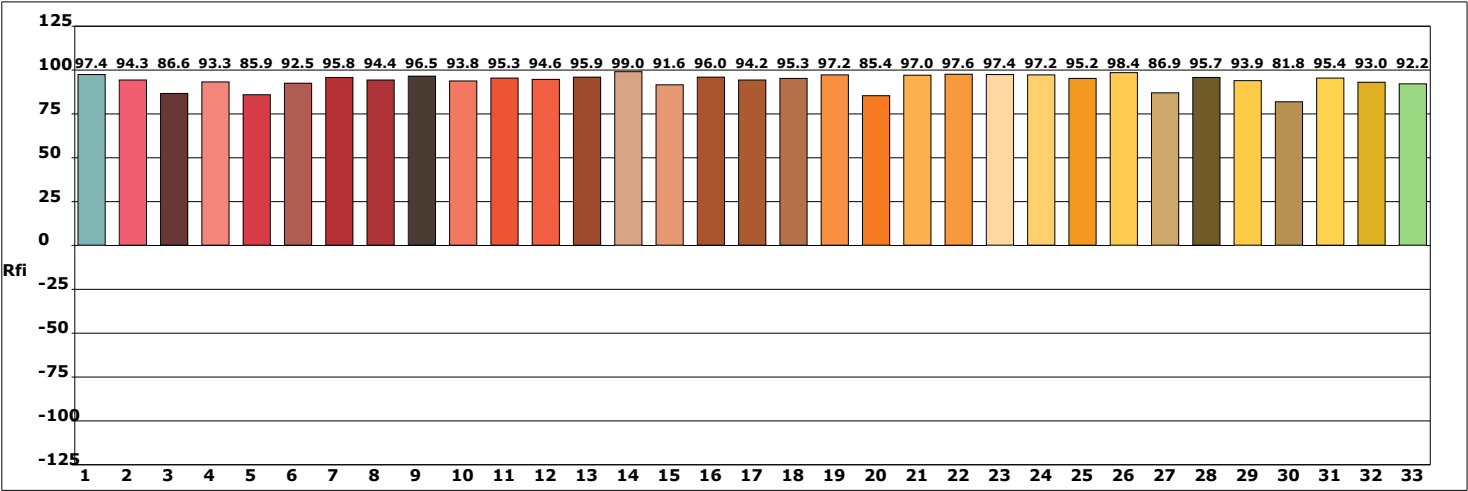


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

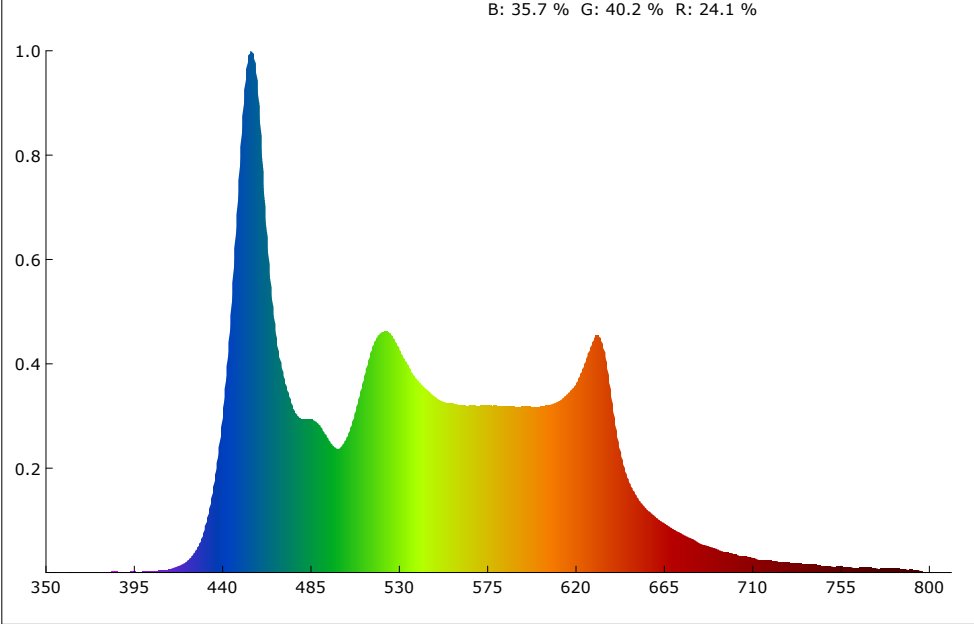
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14



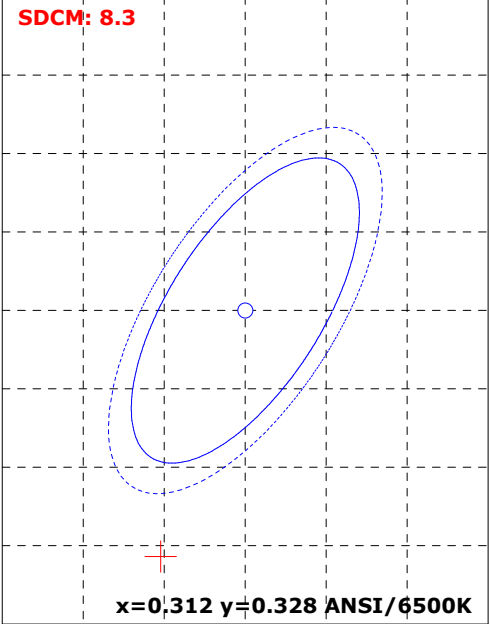
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14

Spectrogram



SDCM



Color Parameter:

x: 0.3071 y: 0.3125 u: 0.2002 v: 0.3056 u': 0.2002 v': 0.4584
R_ratio: 24.1 % G_ratio: 40.2 % B_ratio: 35.7 % RedRatio: 15.9 % GreenRatio: 78.8 % BlueRatio: 5.3 %

Ra: 94.6 AvgR: 92.0
R1: 91.9 R2: 96.5 R3: 94.5 R4: 96.3 R5: 94.2 R6: 92.7 R7: 96.4 R8: 94.6
R9: 87.5 R10: 97.0 R11: 92.2 R12: 67.1 R13: 92.9 R14: 95.6 R15: 91.1

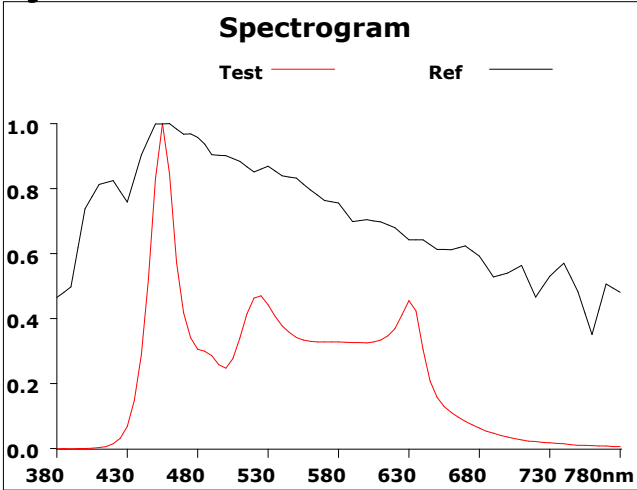
CCT: 7007 K Flux: 7757.142 lm PeakWave: 455.4 nm SDCM: 8.3
S/P: 2.5 CentralWave: 455.6 nm DominantWave: 480.6 nm CentroidWave: 540.9 nm
HalfWidth: 21.4 nm duv: -0.00254 purity: 10.7 % CQS: 89.6
LER(TM-30): 286.1 Ep: 27112.7 mw Rg: 100.7 Rf: 88.5
Red Ep: 6414.7 mw Near red Ep: 429.0 mw Near infrared Ep: 38.6 mw

Electrical parameters:

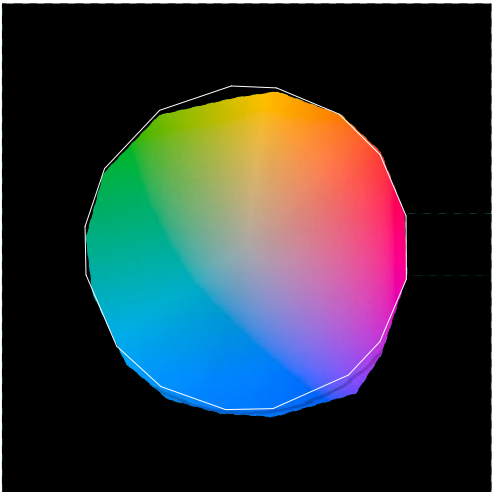
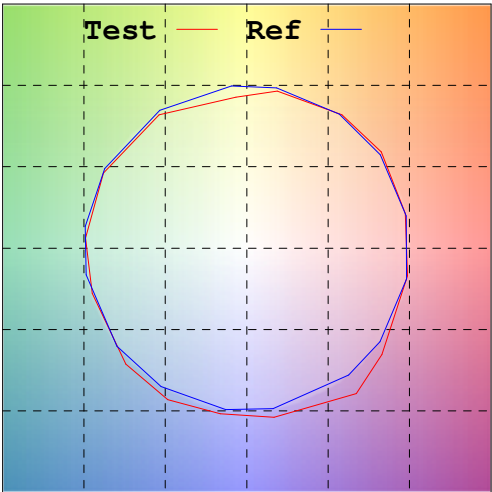
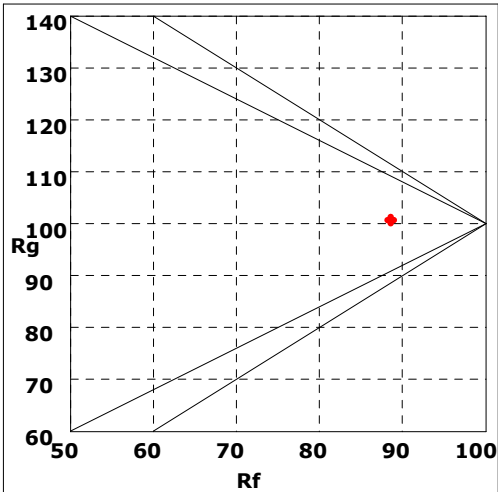
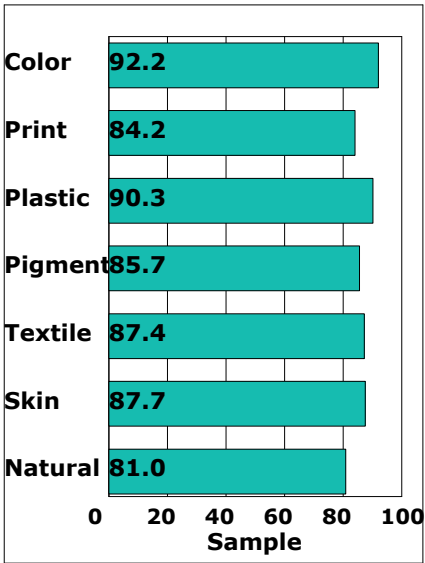
Effic: 41.5 lm/W Energy: 45.2 Effi: G
U: 219.6 V I: 1.231 A P: 187.000 W Pf: 0.691

Product model: Manufacturer: Guangzhou Hotion Technology Co.,
Product number: Test unit:
Tester: Date of observation: 07/16/14
Remarks:

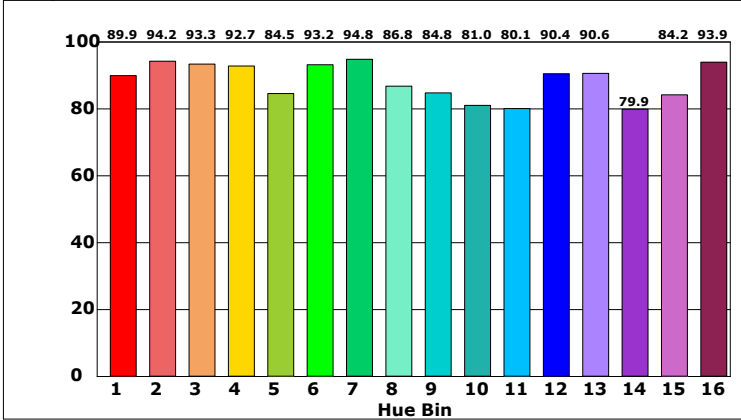
Rf: 88.5 CCT: 7007K u': 0.2002
Rg: 100.7 LER: 286.1 Duv: -0.00254 v': 0.4584



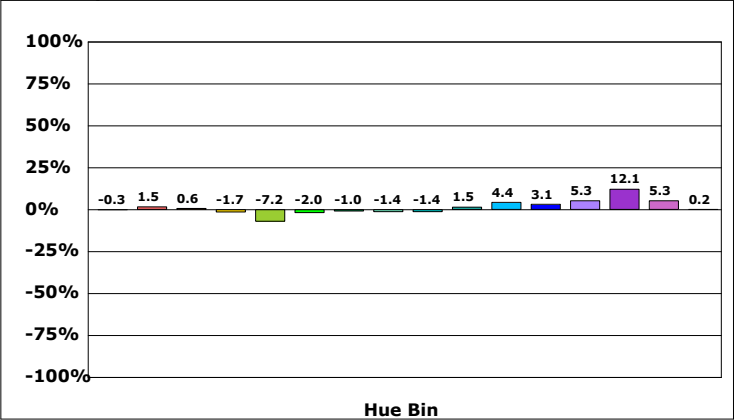
500			
Hue Bin	Rf	Chroma	Hue
1	89.9	-0.3%	1.8%
2	94.2	1.5%	1.3%
3	93.3	0.6%	-1.6%
4	92.7	-1.7%	-0.8%
5	84.5	-7.2%	-1.3%
6	93.2	-2.0%	1.9%
7	94.8	-1.0%	2.7%
8	86.8	-1.4%	6.9%
9	84.8	-1.4%	11.9%
10	81.0	1.5%	12.4%
11	80.1	4.4%	7.9%
12	90.4	3.1%	-2.8%
13	90.6	5.3%	-0.4%
14	79.9	12.1%	-2.4%
15	84.2	5.3%	-5.8%
16	93.9	0.2%	2.0%



Rf by Bue

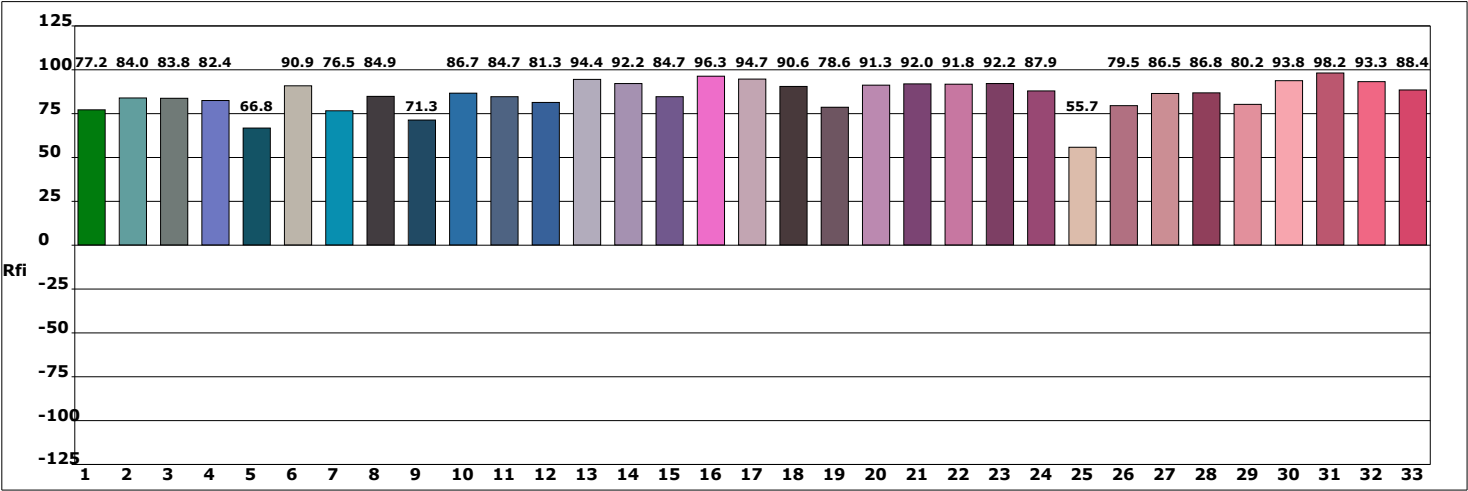
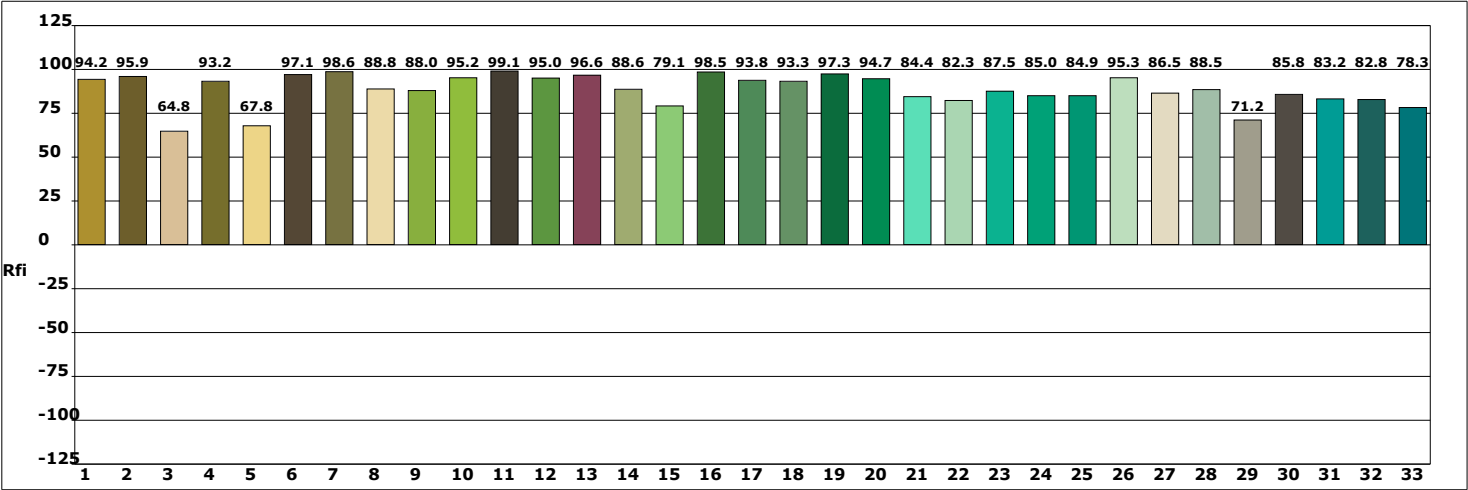
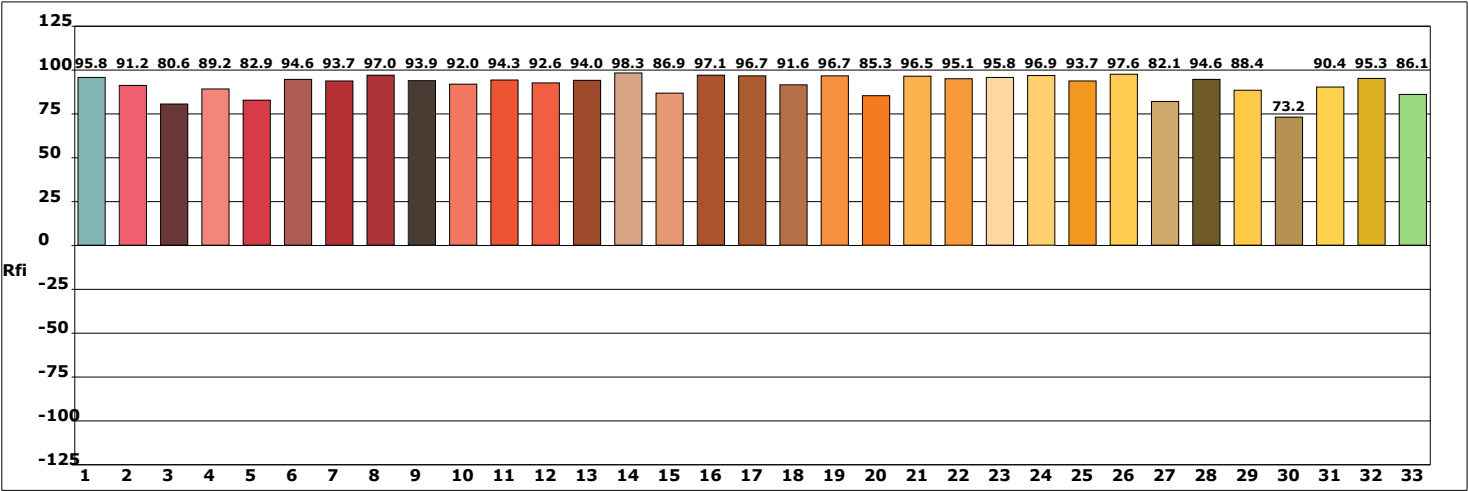


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14



Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 07/16/14